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PATENT SPECIFICATION

408,235

Application Date: Sept. 28, 1932. No. 26,963/32.

Complete Left: Aug. 25, 1933.

Complete Accepted: March 28, 1934.

PROVISIONAL SPECIFICATION.



A New or Improved Tag, Bolt, or like Socket, for Insertion in Concrete and like Media.

I, JAMES HENRY BENNETTS, a British Subject, of Carisbrooke, The Grove, Finchley, London, N. 3, do hereby declare the nature of this invention to be as follows:—

The present invention relates to an anchoring device for use more particularly in surfaces of concrete or like mouldable medium.

The device consists of a casing for incorporation in the surface and containing a tag, bolt or similar anchoring member which can be pushed into the casing when necessary but which can be caused to project therefrom when required for use whilst remaining securely anchored in the casing. In moulding the concrete or the like the devices are distributed at the desired positions behind the centering, that end of each casing making contact with the centering and which will afterwards be flush with the concrete surface, being provided with a hole or slot from which the anchoring tag or bolt will be made to project after the centering has been dropped.

The improved device is especially valuable for use in ceilings, soffits or other downwardly facing surfaces since the casings may be stood on the centering without other support. When the centering is dismantled the tags or bolts will, in this position, automatically drop under their own weight to project from the casings.

In order to limit the amount by which the tag or bolt can project, it may be provided with a head capable of sliding longitudinally in an enlarged cavity in the back end of the casing and of abutting at the extremity of its travel on the shoulder formed where the enlarged cavity narrows down to the slot or hole through which the front end of the anchoring member slides.

An anchoring device in accordance with the invention is adapted for supporting any of the fittings associated with concrete or reinforced concrete structures, and owing to the projecting tag or bolt being accommodated entirely within the outer casing until actually required for use it is unnecessary to cut slots or holes

in the centering near to where the devices are located. During moulding no part of the device will project beyond the general surface level of the concrete.

In a preferred constructional form embodying the features of the invention, the casing is a casting having a facing plate which will be flush with the surface of the concrete and a rearward body portion both having an axial hole for accommodating the bolt or tag. The back end of the casing is increased in cross-section to permit of an enlargement of the axial passage to form a cavity within which a head on the anchoring tag or bolt is free to slide. Between its enlarged back part and its facing plate the casing is of roughly oblong cross-section no larger than is sufficient to permit the passage of projecting shank of the anchoring tag or bolt. There is thus produced part of the way along the passage an internal shoulder within the casing against which the underside of the head of the tag or bolt will abut to limit its outward movement.

The casing is preferably formed to take an anchoring member either in the form of a tag or a bolt. The tag is provided with a head, a short shank, and at its forward end a plate the side edges of which will engage slots throughout the length of the passage in the casing. The plate may be drilled with a hole for the attachment of fittings. The bolt on the other hand is one of ordinary form and the front end of the passage in the casing is accordingly provided with a longitudinally extending enlargement in the middle of the slot provided for the tag. The casing will thus accommodate a tag or bolt as desired. Where the bolt is used the nut is of course not threaded onto it until the centering is removed.

The back end of the casing is left open for the insertion into the passage of an anchoring member and the opening is then sealed by a cover plate or cap, preferably of sheet metal. This prevents the entrance of concrete into the passage during the moulding operation. The enlarged part of the body of the casing and also the cavity therein is preferably

tapered from back to front both to increase the hold of the casing on the surrounding concrete and also to facilitate the introduction of the anchoring member into the cavity. The head on the anchoring member is preferably square and the cavity shaped correspondingly to prevent rotation of the anchoring member. These parts may, however, be of other angular shape or, if rotation is immaterial, they may be circular. The exterior of the casing is preferably made as irregular as possible with grooves, ribs and the like to improve the bonding with the concrete.

It will readily be seen that the contact of the head of the anchoring member with the shoulder in the internal passage of the casing effectively prevents the anchoring member from ever leaving the casing. The length of the enlarged

cavity in the back of the body portion is such that the head on the anchoring member is able to ride sufficiently far back for the front end of the bolt or tag on the anchoring member not to project beyond the face plate. When used on vertical or upwardly facing surfaces the anchoring member must be picked from the casing but the shape of the opening in the face plate thereof makes this easy. When a bolt is used the slot ends enable the shank to be reached for withdrawal, whilst where the flat tag is employed the central widening of the hole is similarly useful.

Dated this 24th day of September, 1932.

For the Applicant:  
BARKER, BRETTELL AND DUNCAN,  
Chartered Patent Agents,  
59 & 60, Chancery Lane, London, W.C. 2.

### COMPLETE SPECIFICATION.

#### A New or Improved Tag, Bolt, or like Socket, for Insertion in Concrete and like Media.

I, JAMES HENRY BENNETTS, a British Subject, of Carisbrooke, The Grove, Finchley, London, N. 3, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The present invention relates to an anchoring device for use more particularly in surfaces of concrete or like mouldable medium.

The device consists of a socket casing for incorporation in the surface and containing a tag, bolt, or similar anchoring member permanently secured therein and which can be pushed into the casing so as to be completely enclosed therein when necessary but which can be caused to project from the casing when required for use. In moulding the concrete or the like the devices are distributed at the desired positions behind the centering, that end of each casing making contact with the centering and which will afterwards be flush with the concrete surface, being provided with a hole or slot from which the anchoring tag or bolt will be made to project after the centering has been dropped.

The improved device is especially valuable for use in ceilings, soffits or other downwardly facing surfaces since the casings may be stood on the centering without other support. When the centering is dismantled the tags or bolts will,

in this position, automatically drop under their own weight to project from the casings.

In order to limit the amount by which the tag or bolt can project, it may be provided with a head capable of sliding longitudinally in an enlarged cavity in the back end of the casing and of abutting at the extremity of its travel on the shoulder formed where the enlarged cavity narrows down to the slot or hole through which the front end of the anchoring member slides.

An anchoring device in accordance with the invention is adapted for supporting any of the fittings associated with concrete or reinforced concrete structures, and owing to the projecting tag or bolt being accommodated entirely within the outer casing until actually required for use it is unnecessary to cut slots or holes in the centering near to where the devices are located. During moulding no part of the device will project beyond the general surface level of the concrete.

The invention will now be described with reference to the accompanying drawings illustrating a preferred constructional form thereof.

In the drawings:—

Fig. 1 is a perspective view of the socket casing.

Fig. 2 is a perspective view of an anchoring tag for use therein.

Fig. 3 is a plan view of the casing.

Fig. 4 is a vertical section of a casing

mounted on the centering prior to the concrete being poured therein, and

Fig. 5 is a similar sectional view after the concrete has been set and centering 5 has been removed.

The casing is a casting having an integral facing plate 1 which will be flush with the surface of the concrete and a rearward body portion 2 both having an axial hole 3 for accommodating the tag 4 or bolt 5. The back end of the casing is increased in cross-section to permit of an enlargement of the axial passage to form a cavity 6 within which a head 7 on the anchoring tag or bolt is free to slide. That portion 8 of the casing between its enlarged back part and its facing plate is of roughly oblong cross-section no larger than is sufficient to permit the passage of the projecting shank of the anchoring tag or bolt. There is thus produced part of the way along the passage an internal shoulder 9 within the casing against which the underside of the head 7 of the tag or bolt will abut to limit its outward movement.

The casing is preferably formed to take an anchoring member either in the form of a tag or a bolt. The tag 4 illustrated in Fig. 2 is provided with a head 7, a short shank 10, and at its forward end a plate 11 the side edges 12 of which will engage slots 13 throughout the length of the passage in the casing. The plate 11 may be drilled with a hole 14 for the attachment of fittings. The bolt 5 on the other hand shown in Figs. 4 and 5 is one of ordinary form and the front end of the passage in the casing is accordingly provided with a longitudinally extending enlargement 15 between the slots 13 provided for the tag. The casing will thus accommodate a tag or bolt as desired. Where the bolt is used the nut is of course not threaded onto it until the centering is removed as shown in Fig. 5.

The back end of the casing is left open for the insertion into the passage of an anchoring member and the opening is then sealed by a cover plate or cap 16, preferably of sheet metal. This prevents the entrance of concrete into the passage during the moulding operation. The enlarged part of the body of the casing is preferably tapered from back to front to increase the hold of the casing on the surrounding concrete. The head 7 on the anchoring member is preferably square and the cavity 6 shaped correspondingly to prevent rotation of the anchoring member. These parts may, however, be of other angular shape, or, if rotation is immaterial, they may be circular. The exterior of the casing is preferably made as irregular as possible with grooves,

ribs, shoulders, and the like to improve the bonding with the concrete.

It will readily be seen that the contact of the head 7 of the anchoring member with the shoulder 9 in the internal passage of the casing effectively prevents the anchoring member from ever leaving the casing. The length of the enlarged cavity 6 in the back of the body portion is such that the head on the anchoring member is able to ride sufficiently far back for the front end of the bolt or tag on the anchoring member not to project beyond the face plate 1. When used on vertical or upwardly facing surfaces the anchoring member must be picked from the casing but the shape of the opening in the face plate thereof makes this easy. When a bolt is used the slot ends 13 enable the shank to be reached for withdrawal, whilst where the flat tag is employed the central widening 15 of the hole is similarly useful.

The mode of operation of the device when used in ceilings and the like is clearly shown in Figs. 4 or 5, in the first of which the casing is shown resting on the centering 17 on which the end of bolt 5 is also supported. The bolt-head 7 is in these circumstances at the back end of the cavity 6. After the concrete 18 has been moulded, the centering 17 is removed and the bolt immediately drops under its own weight till the head 7 contacts with shoulders 9 which is the condition illustrated in Fig. 5.

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is:—

1. An anchoring device comprising a socket casing for incorporation in a concrete or like surface, containing a tag, bolt, or like member permanently secured therein and capable of being pushed into the casing so as to be completely enclosed therein or caused to project from the casing when required for use.

2. An anchoring device as in claim 1, wherein the amount of the projection of the tag or bolt is limited by providing the latter with a head capable of sliding longitudinally in an enlarged cavity in the casing and of abutting at the forward extremity of its travel on a shoulder in the cavity.

3. An anchoring device as in claim 2, wherein the internal shoulder for limiting the movement of the tag or bolt is formed by the narrowing down of the enlarged cavity to the slot and/or hole through which the forward end of the anchoring member slides.

4. An anchoring device as in any of the

preceding claims, wherein the socket casing is formed with an integral facing plate which will be flush with the surface of the concrete or the like, and by means of which the device may be stood on the centering without other support.

5. An anchoring device as in any of the preceding claims, adapted for using alternatively a tag or bolt in which slots are provided extending the whole length of the passage through the casing for engaging the side edges of the tag.

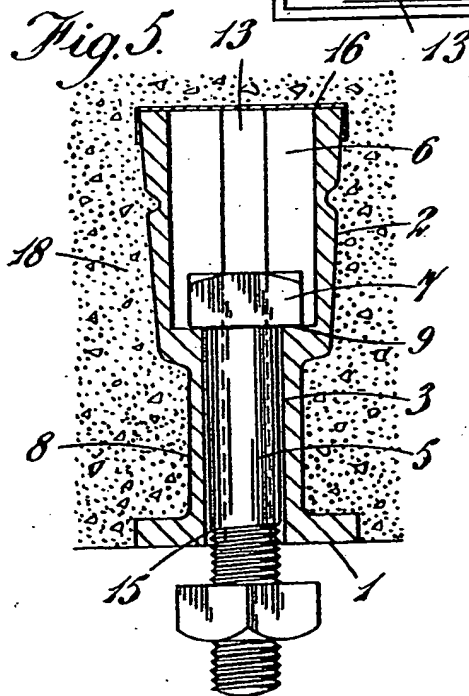
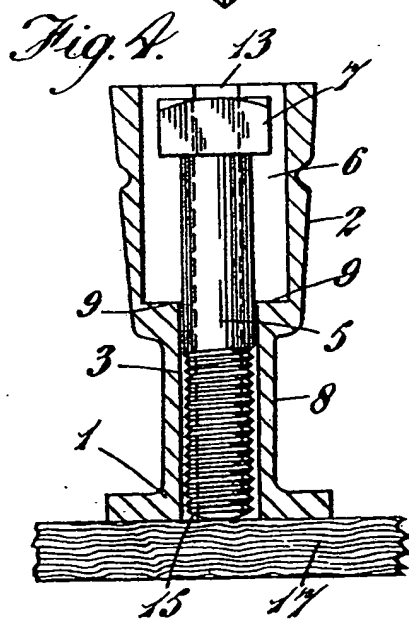
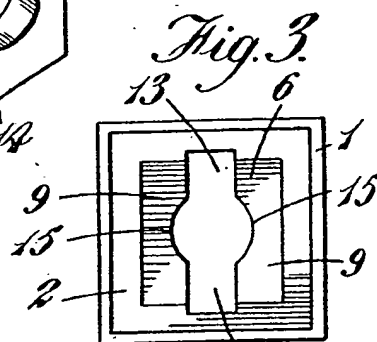
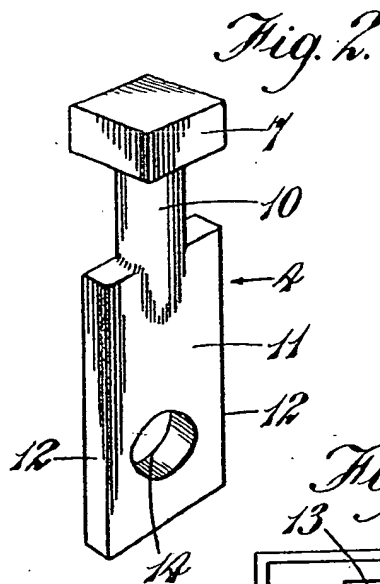
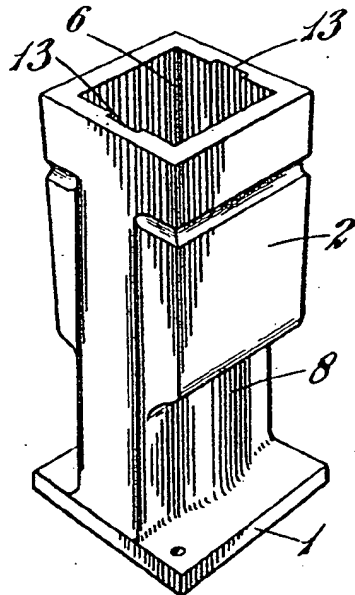
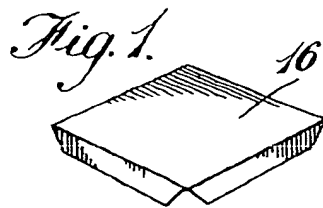
6. The improved anchoring device substantially as described with reference to the accompanying drawings.

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Dated this 21st day of August, 1933.

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[This Drawing is a reproduction of the Original on a reduced scale.]



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